

RFC4 (C-9): sc-28301

BACKGROUND

Replication factor C (RFC) is an essential DNA polymerase accessory protein that is required for numerous aspects of DNA metabolism including DNA replication, DNA repair, and telomere metabolism. RFC is a heteropentameric complex that recognizes a primer on a template DNA, binds to a primer terminus and loads proliferating cell nuclear antigen (PCNA) onto DNA at primer-template junctions in an ATP-dependent reaction. All five of the RFC subunits share a set of related sequences (RFC boxes) that include nucleotide-binding consensus sequences. Four of the five RFC genes (RFC1, RFC2, RFC3 and RFC4) have consensus ATP-binding motifs. The small RFC proteins, RFC2, RFC3, RFC4 and RFC5, interact with Rad24, whereas the RFC1 subunit does not. Specifically, RFC4 plays a role in checkpoint regulation. RFC4 is a component of BASC (for BRCA1-associated genome surveillance complex) which serves as a sensor for abnormal DNA structures and/or as a regulator of the postreplication repair process. The human RFC4 gene maps to chromosome 3q27.3 and encodes the RFC4 subunit.

REFERENCES

1. Cullmann, G., et al. 1995. Characterization of the five replication factor C genes of *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 15: 4661-4671.
2. Beckwith, W.H., et al. 1998. Destabilized PCNA trimers suppress defective RFC1 proteins *in vivo* and *in vitro*. *Biochemistry* 37: 3711-3722.
3. Noskov, V.N., et al. 1998. The RFC2 gene, encoding the third-largest subunit of the replication factor C complex, is required for an S-phase checkpoint in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 18: 4914-4923.

CHROMOSOMAL LOCATION

Genetic locus: RFC4 (human) mapping to 3q27.3; Rfc4 (mouse) mapping to 16 B1.

SOURCE

RFC4 (C-9) is a mouse monoclonal antibody raised against amino acids 181-363 of RFC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RFC4 (C-9) is available conjugated to agarose (sc-28301 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28301 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28301 PE), fluorescein (sc-28301 FITC), Alexa Fluor® 488 (sc-28301 AF488), Alexa Fluor® 546 (sc-28301 AF546), Alexa Fluor® 594 (sc-28301 AF594) or Alexa Fluor® 647 (sc-28301 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28301 AF680) or Alexa Fluor® 790 (sc-28301 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

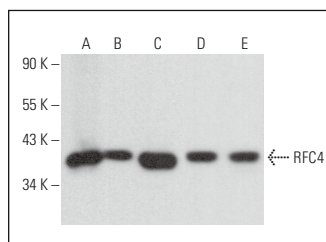
RFC4 (C-9) is recommended for detection of RFC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RFC4 siRNA (h): sc-36406, RFC4 siRNA (m): sc-36407, RFC4 shRNA Plasmid (h): sc-36406-SH, RFC4 shRNA Plasmid (m): sc-36407-SH, RFC4 shRNA (h) Lentiviral Particles: sc-36406-V and RFC4 shRNA (m) Lentiviral Particles: sc-36407-V.

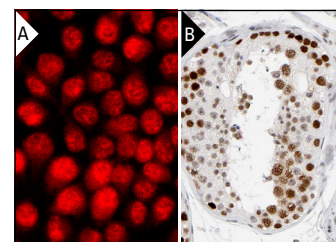
Molecular Weight of RFC4: 37 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, TF-1 cell lysate: sc-2412 or HeLa nuclear extract: sc-2120.

DATA



RFC4 (C-9): sc-28301. Western blot analysis of RFC4 expression in HeLa nuclear extract (A), HEL 92.1.7 (B), TF-1 (C) and M1 (D) whole cell lysates and rat testis tissue extract (E).



RFC4 (C-9): sc-28301. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in ductus seminiferus. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Ehlén, A., et al. 2011. RBM3-regulated genes promote DNA integrity and affect clinical outcome in epithelial ovarian cancer. *Transl. Oncol.* 4: 212-221.
2. Song, L., et al. 2013. DNA repair and replication proteins as prognostic markers in melanoma. *Histopathology* 62: 343-350.
3. Kandelman, J.D., et al. 2013. Expression of claudin, paxillin and FRA-1 in non-nodular breast lesions in association with microcalcifications. *Sao Paulo Med. J.* 131: 71-79.
4. Cao, X., et al. 2017. miRNA-504 inhibits p53-dependent vascular smooth muscle cell apoptosis and may prevent aneurysm formation. *Mol. Med. Rep.* 16: 2570-2578.
5. Dai, L., et al. 2018. Modulation of protein-interaction states through the cell cycle. *Cell* 173: 1481-1494.e13.

RESEARCH USE

For research use only, not for use in diagnostic procedures.